



Non-Support to Partial Support: Reclamation of the Lower Rock Creek Watershed, McCreary County, Kentucky

Kentucky Division of Water, Water Quality Branch, Nonpoint Source Section

Rock Creek originates in Picket County, Tenn., and flows across the state line into Kentucky. After crossing the state line, Rock Creek flows for 21 miles before entering the Big South Fork of the Cumberland River. The Commonwealth of Kentucky designates Rock Creek as a wild and outstanding state resource water from the state line to the confluence of White Oak Creek. At the junction of White Oak Creek, Rock Creek has historically been impacted by acid mine drainage for four miles to the confluence with the Big South Fork of the Cumberland River (Figure 1). Sources of impairment include more than 40 coal mine portals and eight coal refuse dumps (Carew 2002). These impairments have led to the decimation of the lower Rock Creek Watershed and the initial listing of Rock Creek in the 1990 303(d) List of Impaired Waters as nonsupport for aquatic life and swimming (KDOW 1990).

The Rock Creek Task Force was formed in order to restore the lower Rock Creek Watershed. This group includes 12 state and federal agencies and conservation organizations. Funding for Phase I (Total project cost \$970,000) included \$319(h) Clean Water Action Plan grant (\$200,000) from the U. S. Environmental Protection Agency (EPA) through the Kentucky Division of Water, Appalachian Clean Streams Initiative (\$280,000), Personal Responsibility in a Desirable Environment grant (\$250,000) from National Oceanic and Atmospheric Administration, Kentucky Abandoned Mine Land Grant (\$160,000), and U. S. Geological Survey cost share (\$80,000). The goal of the Rock Creek project was to restore designated uses by reducing sediment and acidity entering Rock Creek and return the land where coal processing refuse dumps are located to a vegetative state compatible with the surrounding land (Carew 2002).

Phase I Best Management Practices (BMP) installed in the Rock Creek Watershed included the following: the removal of coal refuse from the banks of Rock Creek, installation of open limestone channels, construction of a modified vertical flow system and the application of limestone sand during of the project (Carew 2002). The Kentucky Division of Abandoned Mine Lands was the lead agency in BMP implementation.

Activities to date have dramatically improved the water quality in the lower Rock Creek Watershed. For example, the acid loading into the Big South Fork of the Cumberland River from Rock Creek has been reduced

from a monthly mean of 110 metric tons to near 0; the removal of 25,000 yd³ coal refuse from the banks and revegetation of Rock Creek have reduce the sediment entering the stream by 500 tons annually (Carew 2002).

Populations of fish are improving in the lower Rock Creek Watershed. The numbers and diversity of fish species are increasing. Stations that once supported no fish are now supporting fish (Carew 2002). Due to these improvements, Rock Creek was proposed as partial support for aquatic life and swimming in the 2002 *List of Impaired Waters for Kentucky* (KDOW 2002).

Although improvements have been seen, additional reclamation work needs to be completed in the watershed. Phase II of the Rock Creek Project is underway. Funding from §319(h) Clean Water Action Plan grant from the U. S. EPA through the Kentucky Division of Water has been secured. Addition BMPs will be installed in the near future.

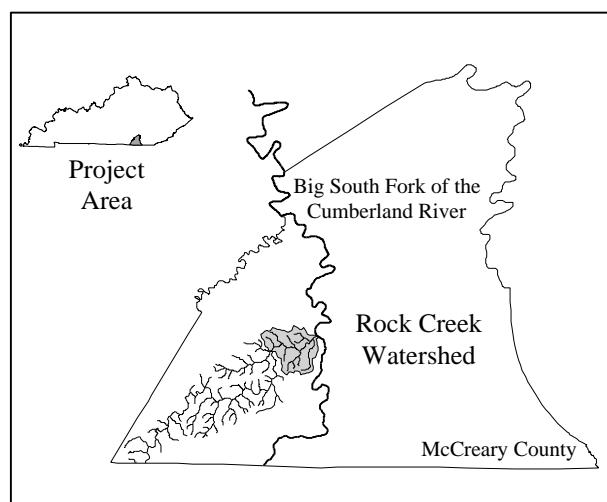


Figure 1. Location of Rock Creek Watershed, McCreary County, Kentucky. Shaded region represents acid mine drainage impacted area of Rock Creek.

Literature Cited

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